

***Ptilotus mitchellii* (Amaranthaceae), a new species from the Pilbara Region, Western Australia**

by

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Abstract:

Ptilotus mitchellii (Amaranthaceae), a new species from the Pilbara Region, Western Australia. *Sendtnera* 2: 25 - 30. 1994. ISSN 0944-0178.

A new *Ptilotus* from the Pilbara Region in Western Australia, *P. mitchellii* Benl sp. nov., is described and figured with drawings.

***Ptilotus mitchellii* Benl sp. nov. (Figs. 1 and 2).**

Fruticulus an frutex validus multiramis et plurispicatus. Caules (curvati-) adscendentes vel (sub)erecti, subteretes, angulosi-striatuli; in statu juvenili subtiliter luteoli- postea cinerascenti-furfuracei cum sublaeves demum nigrescentes, rimulosi-corticati. Rami ramulique foliosi, juniores dense furfuracei, vetustiores apicibus puberulis spicas producentes. Folia caulina permulta alternantia, conspicue alati-petiolata, plerumque adscendentia. Foliorum laminae carnosulae dein (rigidi-)coriaceae, oblongi-ellipticae ad obovatae, raro minutissime cuspidatae, concolores, primum laete virides tandem atrovirescentes, in margine integerrima anguste aurantiacae; primo utrimque sparsim pilosulae mox glabrescentes et minute tuberculares, omnes sensim vel breviter in petiolum plus minusve alatum cuneati-contractae; nervo intermedio subtus basim versus \pm prominulo; axilla foliorum pulvinate lanata. Inflorescentiae singulae ad ternae (raro quaternae) ramos ramulosque terminantes, colore vivido tepalorum juvenilium speciosae, sub anthesi ineunte hemisphaericae tum (obtus-) cylindratae, pedunculati-erectae; rhachide densissime albivilloso. Flores hermaphroditi 1-bracteati et 2-bracteolati breviter pedicellati, ad circa 60 densius collecti, perianthio primo purpurascenti-lucentes postea tarde in colorem visu aenei-opacum transeuntes; nonnumquam singulares pedunculati sub spica provenientes. Bractee bracteolaeque in floribus maturis scariosae nitidulae, extra basilariter tantum parce pilosulae, convexae, ad nervum medium atrofuscae et modice carinatae, perianthio conspicue breviores, post lapsum perianthii plerumque superstites; bractee obtusae cymbiformes ad late ellipticae, lateribus postremo sursum haud raro grosse laceratae; bracteolae paulum breviores angustiores, lateribus integrae, perianthio arcte adpressae. Perianthium pentaphyllum praesertim superne laete coloratum, erectum, demum apicem versus subcampanulati-patens, ad circa 6 mm longum; basi in tubum turbinatum intense pilosum conniventi. Tepala elongati-ovata ad ovati-lanceolata leviter carinulata, inferne distincte trinervia, juvenilia saturate violacei-purpurea, ad areolam medianam subdura atropurpurascentia, marginibus integris aenei-pallescentibus apice subacuto tenuis plus minusve involutis; segmenta perianthii in dimidio inferiore indumento oblecta, pilis albis strictis diversiformibus, partim basi anulatim copiose

patentibus, partim sulcis intercostalibus fasciculatim (semi)adpressis orientibus. 2 tepala exteriora intus glabra; 3 interiora breviora, angustiora et visu acutiora, pilis fasciculatis paulo longioribus, intus autem dense pilis mollibus crispatis intertextis subtilissime articulati-nodulosis, in dimidio infero praecipue marginibus - haud raro unilateraliter - enatis, pistillum staminaque juvenilia arcte involventibus. Androecium et gynoecium omnino glaberrima. Stamina 5 aequalia omnia perfecta, in cupulam obconicam membranaceam comparate longam tubo turbinato perianthii dimidio infero tantum arcte insidentem coalita; pseudostaminodia nulla. Filamenta applanata superne subulata basi valde dilatata; antherae didymae dorsifixae conspicuae lati-ellipsoideae. Ovarium clavatum proinde subglobosum, primo manifeste dein minus distincte stipitatum; stylus rectus centralis filamenta libera primo subaequans, inferne modice dilatatus; stigma minimum papillosum denique nigrescens.

Taxum novum (affinitate obscurum) manifeste tegmento peculiari caulium ramorumque, structura superficialium foliorum in siccatione, colore florum ab omnibus speciebus adhuc descriptis praeclare recedit.

Holotypus: Approximately 6 km W of Mt Boggola at the end of a "Newcrest" geological exploration track through previously inaccessible area, 117° 35' 22" E, 23° 47' 48" S, W. A., Vacant Crown Land, 1 Oct 1992, *W. HARVEY 2*, COMO; isotypi: BROOME, M.

Plant a bushy shrublet or straggling shrub growing to and over 1 m high and across. The much-branching densely leafy shoots ascending to suberect, softly woody, terete and weakly angular-striate, remarkable for a thin bran-like to starch-like indumentum (of tiny, and in part irregularly shaped, hair-like excrescences) yellowish in distal portion, becoming greyish downwards, glabrescent and finally darkly-barked to 2-5 mm or more thick; additional fine pubescence of delicate soft hairlets (c. 1 mm long) only at top of the alternating branches and branchlets, these merging into the peduncles and rachises of several- to many-flowered inflorescence. Leaves alternate, obviously petiolate, closely spaced, at intervals of 0.5 to 1 (-3.8) cm apart, variable in size and outline, erect, spreading then more or less horizontal, (1.3-) 2.5-3.6 (-4.4) cm long by (0.5-) 0.8-1.2 (-1.6) cm wide; sparsely puberulent only when young, the leaf-axils with a yellowish cushion of nearly straight hairlets; the cushion c. 0.5 mm in diameter. Leaf-lamina slightly fleshy to firmly leathery in texture, either narrow- to broad-elliptic or obovate, the smaller at times (ob)lanceolate, mostly obtuse or bluntly acute, rarely pointed with a minute excurrent tip, gradually or somewhat abruptly cuneate to a well-defined petiole (0.5-) 0.7-1.6 cm long, with slender wings disappearing above the base, uniformly green on both surfaces, ageing greyish-green and dull green, tinged orange to reddish-brown along c. 0.15-0.3 mm broad entire margins. Juvenile blades with crisped rough cream-coloured hairs to c. 0.3 mm long on both sides, soon turning minutely tuberculous to bullate-rugate all over; venation mostly obscure except for the concolorous to light brown midvein often prominent and narrowly grooved proximally. The pedunculate finally upturned inflorescences not just innumerable (at most 35 spikes in our terminal fragments up to c. 40 cm long) but sufficiently striking towards apices with lustrous tepals deep violet-purple when young, obscured in lower halves by the bracts and dense tepal pubescence; spikes either solitary or borne in pairs or threes rarely in fours, initially semiglobose and 1.2-1.6 cm across, soon lengthening to ovoid-conical and cylindrical, at most 4-4.5 cm when fully opened, finally overtopping the foliage. Rachis nearly straight, averaging 1.2 mm in diameter, densely white-villous with fine, more or less curving weakly septate hairs c. 1.5 mm long, surrounding the short flower-pedicels; these measuring c. 0.6 x 0.25 mm and jointed above the bracteoles. The long-lasting bisexual flowers 5-merous, varying greatly in number, up to 64 per spike in present material, close-set all along but occasionally one to three isolated under the spike (to about 3 mm from base) on a short stout peduncle. Subtending floral bracts and bracteoles well-developed, curved inwards, obtuse to broadly acutish, thinly scarious and shining, faintly keeled by an evident midrib with a dark

reddish-brown median area, the membranous wings becoming pale and almost translucent; sparingly pilose with c. 0.5 mm long coarse little-jointed hairlets arising outside at or near the base, otherwise quite glabrous and smooth, subsistent, somewhat unequal. Bract in general semirigid, 2.5-3.6 (-4.1) mm long and up to 2.6 mm wide when in bloom, ranging in shape from broadly boat-shaped to ovate-elliptical, with the wings sometimes becoming more or less incised in upper portion. Bracteoles rather shorter (to 3.2 mm), narrower (c. 1.4 mm), the entire wings usually hyaline, tightly embracing the perianth in its lowest parts. Perianth firmly erect, incurved upwards, at length subcampanulately patent in upper scarious region, scarcely maturing to above 6 mm in overall length, constricted at the base into a darker indurated turbinate tube to 1.4 mm high and about 0.6 mm across near the middle, somewhat notched below due to the pedicel attachment, and densely clothed with a broad ring of straight snowy white hairs up to 3.3 mm long, remotely and nodosely jointed with twists between the nodes. The rigid dimorphic tepals at anthesis all brightly and glossy violet-purple with an opaque persistently dull or dark purple centre, three fairly bold veins in lower half confluent upwards to a median rib not reaching to tepal summit, the entire membranous limbs paler turning bronze and giving older spikes a yellow-brown aspect; exposed glabrous shining apices slightly acutely-concave, projecting considerably beyond the bracts as well as the uneven dorsal vestiture comprising both the basal hairs already mentioned and scantier fine trichomes (with an evider articulation) proceeding in loosely appressed fascicles from between the ribs in lower part of segments. Outer perianth-segments oblong- to elongate-ovate, varying from 4.8 to 6.0 mm long and 2.0-2.8 mm wide at the middle, the fasciculate outer hairs to 2.8-3 mm long; completely glabrous within. Three inner tepals somewhat shorter (4.2-5.6 mm), usually narrower (0.8-1.3 mm), tending to recurved (at least when dry) mainly towards apex without the tips becoming more acute, exhibiting fasciculate hairs to about 3.7 mm long on outside; beard-like entangled internal wool developed chiefly marginally at and below the middle of tepal, sometimes on one side only (the concerned segment then usually broader), its less prominently septate often twisted white hairs (mostly under 3 mm long) covering the internal structure of the flowers. Androecium, consistently pentamerous, and pistil, scarcely attaining length of perianth, glabrous throughout. Stamens all antheriferous, staminodia (and interposed pseudo-staminodia) lacking. Free portions of filaments usually lengthening to 2.4 mm at anthesis, c. 0.15 mm wide near middle, shortly subulate at top, slightly flattened downwards and markedly dilating to 0.6 mm wide at base; united with rounded sinuses to form a delicate turbinate prominent cupula with a free ring of c. 1 mm in its distal half, otherwise intimately adnate to the perianth-tube. The relatively large 2-celled anthers broadly ellipsoid in outline, growing commonly to 0.9-1.2 x 0.4 mm, initially yellowish, turning reddish brown. Ovary purplish, stipitate, ellipsoid-obovoid to club-shaped, around 3 mm long (including stipes) and 0.8-1 mm in radical width, at length subglobose, strongly enclosed basally by the free staminal ring. The simple terete subsistent style central, erect, 0.15 mm thick near middle, hardly dilated to c. 0.4 mm at its very base, and approximately equalling the free filaments in young flowering stages, then lengthening up to 3 mm. Stigma minutely capitate, papillose, whitish, nigrescent, soon exceeding anthers, sometimes reaching tip of perianth.

Material

The description is based on the type material consisting of 12 terminal segments up to c. 40 cm long.

Distribution

Currently only known from the type locality which lies in the Fortescue District of the Pilbara Region, Northern Botanical Province of Western Australia.

Habitat

Collected by Miss *W. HARVEY* of Miner Station (3 Oct 1991) from a scree slope on a red slate hill, growing with an undescribed species of *Chamelaucium* and a species of *Triodia*.

Flowering period

Abundantly in September.

Discussion

The new species is obviously distinct from all taxa of *Ptilotus* recognised at present. It is sharply defined by having a furfuraceous to farinaceous indumentum in apical portions of stems and branches, in conjunction with a tuberculate-looking surface structure of leaves and the noticeable highly coloured flowers towards top of the spikes. Stem cover is somewhat reminiscent of a comparable situation in *Ptilotus obovatus* var. *parviflorus* (BENL 1960) where, however, the bran-like aspect is mainly caused by the presence of tiny stellate hairs closely overlapping each other.

Conservation status

Ptilotus mitchellii has a very restricted range and seems to be endemic to the Pilbara Region, W. A. Its actual conservation status might therefore be "1RW7" using the criteria of BRIGGS & LEIGH (1988).

Etymology

The specific epithet was given in honour of Mr. Andrew A. MITCHELL, who was then officer in charge of the Australian Department of Agriculture KARRATHA, Western Australia. He has for many years provided us with valuable *Ptilotus* material from his own collections, e.g. *Ptilotus trichocephalus* (BENL 1990), and has now kindly sent me specimens of the new taxon treated here.

Acknowledgements

The figures were drawn by Mr. A. BÖHM, to whom I am very grateful. Dr. C. Dennis ADAMS, London, was again kind enough to have a critical look at a draft of this paper; I owe him deepest thanks for valuable comments.

References

- BENL, G., 1960: Beitrag zu einer Revision der Gattung *Ptilotus* R. Br. (Amaranthaceae), 3. Teil. - Mitt. Bot. Staatssamml. München 3: 510-518.
 - 1990: Further taxonomic studies in Australian Amaranthaceae. - Mitt. Bot. Staatssamml. München 29: 495-502.
 BRIGGS, J. D. & J.H. LEIGH, 1988: Rare or Threatened Australian Plants. - Special Publication Nr. 14, Australian National Parks and Wildlife Service, Canberra, pp. 277.

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Figure 1. *Ptilotus mitchellii* Benl, Isotype sheet, M. (Drawn according to a photo of K. LIEDL; scale 1:2)

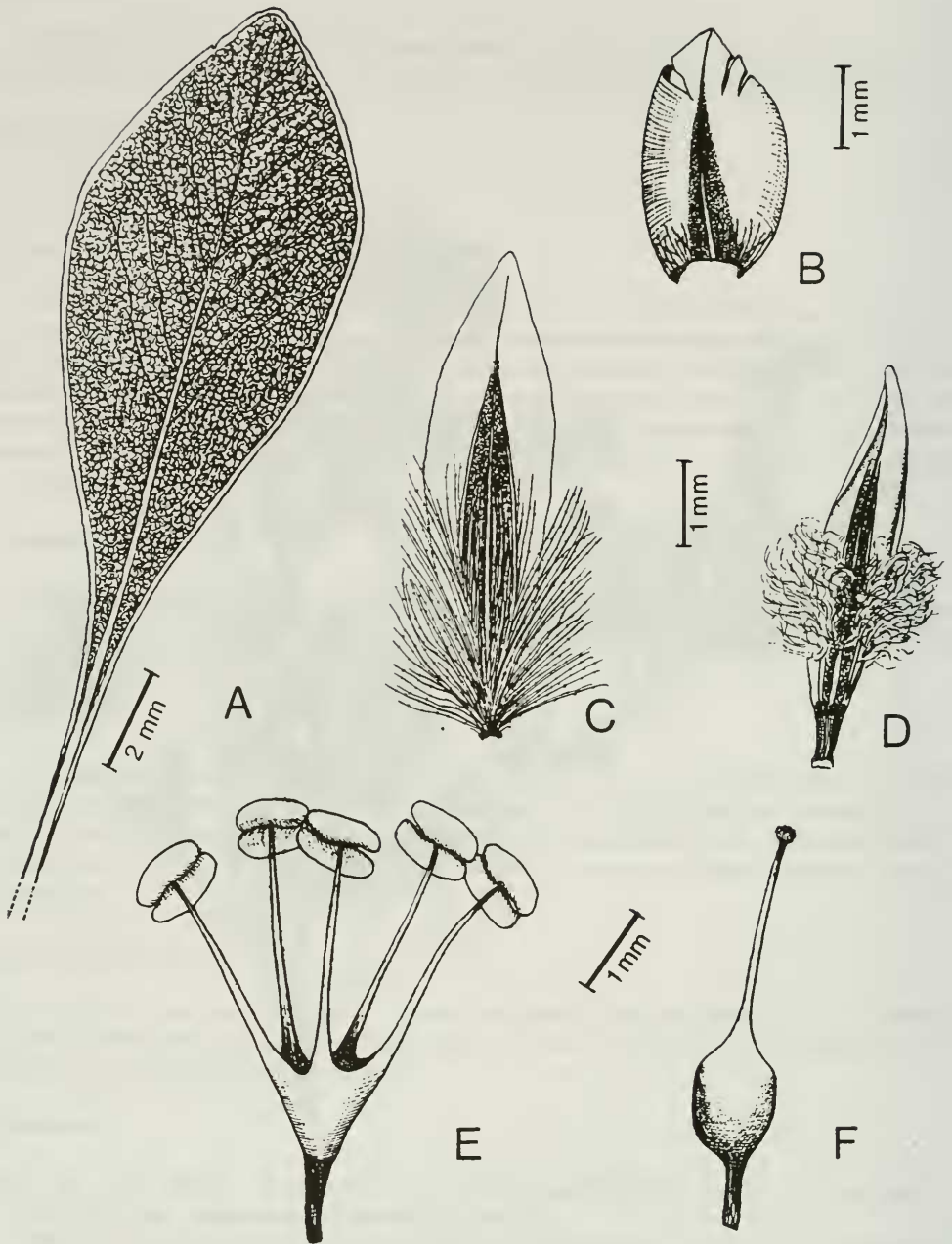


Figure 2. *Ptilotus mitchellii* Benl. A - Young leaf. B - Bract, outer face. C - Outer tepal, outer face. D - Inner tepal, inner face; outer pubescence removed. E - Androecium. F - Gynoecium. (Drawn from isotype by A. BÖHM).